INDUSTRIAL TRAINING REPORT

COMPARISON OF WIRELESS TECHNOLOGY VS. HARDWIRED NETWORK IN POLYTECHNIC SEBERANG PERAI AND THE RELIABILITY OF WEB APPLICATION SYSTEM TOWARDS THE POLYTECHNIC MANAGEMENT

By

SHEILA A/P MAHALINGAM

The Report Submitted in fulfilment of the requirement for the

Master of Information Technology

UNIVERSITY OF LA ROCHELLE (ULR)

In partnership with

OPEN UNIVERSITY MALAYSIA (OUM)

Centre for Graduate Studies

Open University Malaysia

SEPTEMBER 2005/2006

ABSTRACT

In this paper, I propose an analysis of wireless LAN with wired LAN together with the reliability of the web application system in Polytechnic Seberang Perai (PSP) Campus Network. Wireless local area networks (WLAN) are expected to be major growth factor for communication networks in the up coming years. They are expected to provide a transparent connection for mobile hosts to communicate with other mobile host and wired host on the wired LAN and broadband networks. The quality of available network connections can often have a large impact on the performance of distributed applications. For example the web applications such as PMIS (Polytechnic Management Information System) suffer increased response times as a result of network congestion. For these applications, the data transfer time is directly related to the bandwidth of the connection. Available bandwidth depends on two things: 1) the underlying capacity of the path from client to server, which is limited by the bottleneck link; 2) the amount of other traffic competing for links and path. If measurements of these quantities were available to the application, the current utilization of connection could be calculated. Network utilization could the be used as a basis for selection from a set of alternative connections or servers, thus providing reduced response time. Major changes of network are established at PSP with the increased number of students and staffs. In order to expand the network, a proper planning is needed to identify the best performance of network to be integrated into the existing network and analyze the capital expenditures and reliability for future technologies to be compatible and operate well.

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES

LIST OF FIGURES

LIST OF FIGURES

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Critical Incident

Currently Polytechnic Seberang Perai is in progress of expanding their network system to fulfill the increasing number of students and lecturers. In order to produce quality graduates; a relevant education and training programmes in line with the advancement of technology are needed. On the other hand Polytechnic Management Information System are being used semester by semester to make sure that data are key in sequence ; problem arising on each transaction or processes due to the change of policy which effects the reliability of the system. Increasing data and accessing speed per second causes system deadlock during peak hours especially during module registration, student registration and examination process . An impact analysis is needed on improving both the network and PMIS system when they are integrated together to facilitate the staff, student and PSP management.

1.2 Background

Polytechnic Seberang Perai (PSP) was official launched on 1 September 1998.It is situated at Jalan Permatang Pauh, Pulau Pinang. The campus area is about 100 hectare. PSP is located in highly developed industrial zone which takes about 30 minutes from Georgetown, Penang. Polytechnic Seberang Perai offers variety of courses such as Electrical Engineering, Mechanical Engineering, Commerce and Information Technology for Diploma and certificate level. At Polytechnic there are several departments and units. There are main 5 Department, (Department of Electrical Engineering, Department of mechanical Engineering, Department of Commerce, Department of Mathematics & Computer Science and Department of General Studies). There are about 10 main units which include Administration, Finance, ICT, Students Affair, Examination, Sports and Co-curriculum, Multimedia and Resource, Library, Training & Further Studies and Counseling.